A Hayden/VNU Publication

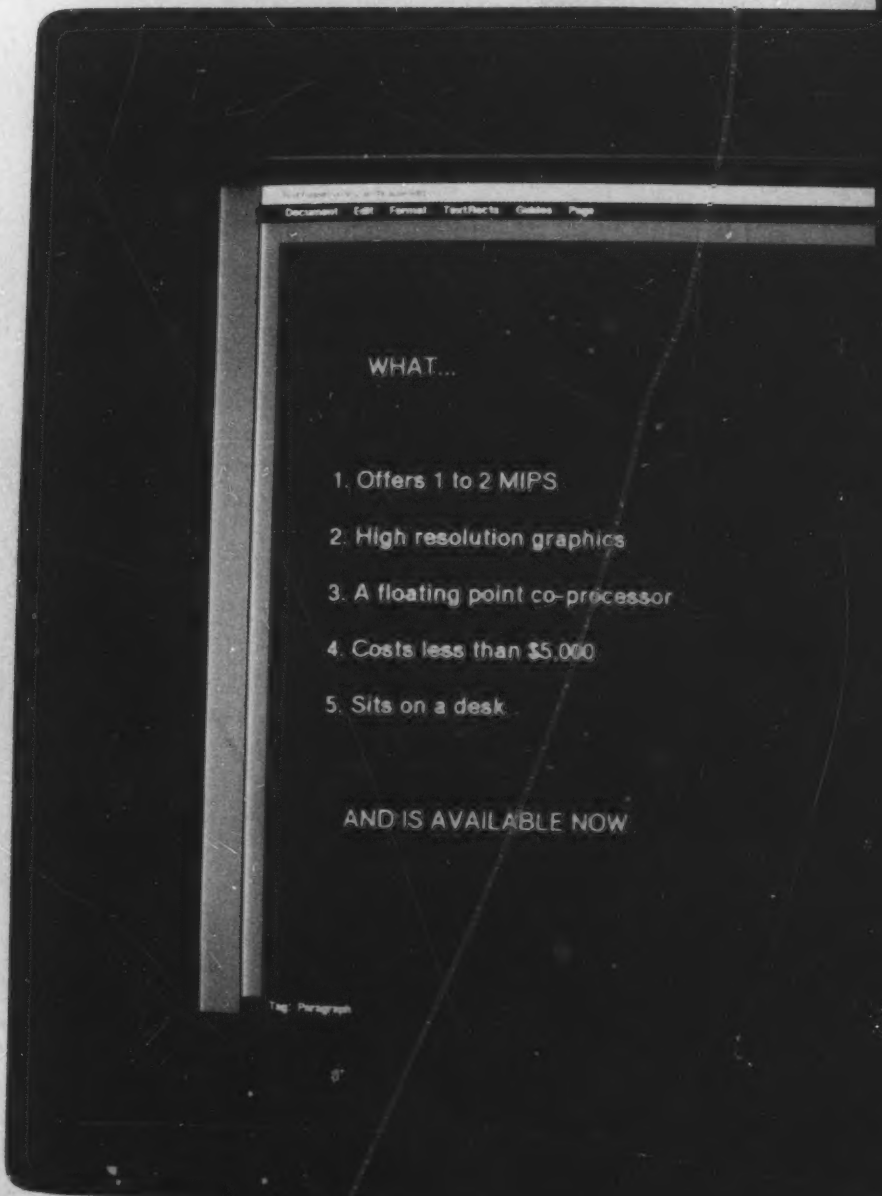
October 1987

- C4485-1
10/13/87

DECISIONS

Computer & Communications

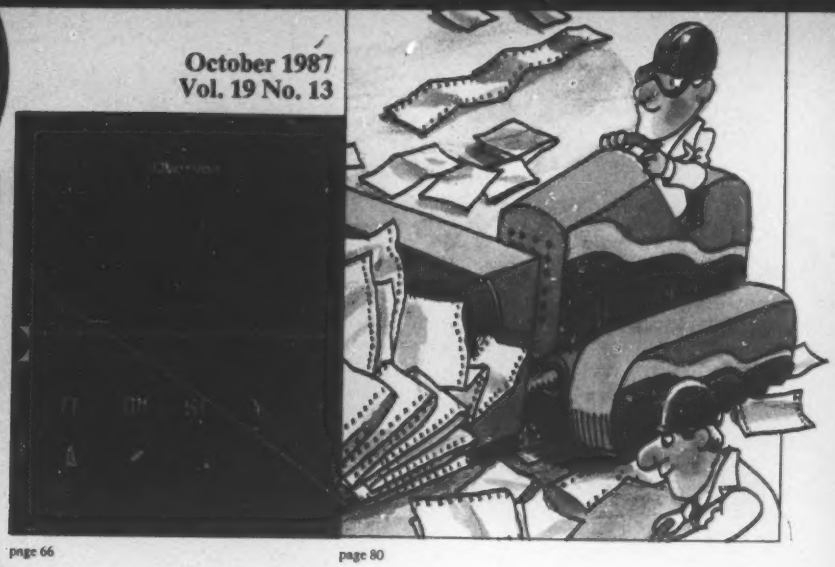
WORKSTATIONS THAT OUTMUSCLE MICROS


Document Edit Format Text/Rects Guides Page
WHAT...
1. Offers 1 to 2 MIPS
2. High resolution graphics
3. A floating point co-processor
4. Costs less than $5,000
5. Sits on a desk
AND IS AVAILABLE NOW
Tag: Paragraph

********** 5-DIGIT 20814
C00259074-3
A JOYCE SYS PROG
CONGRESSIONAL INFO SVC
4220 E W HIGHWAY
BETHESDA MD 20814

Plus:
- MIS Attitudes Survey
- Plan Now for ISDN

Computer & Communications
DECISIONS
October 1987
Vol. 19 No. 13



page 66

page 80

Cover Story

WHEN A MICRO CAN'T HACK IT

by Gary Stix

More processing power, superior graphics, increased connectivity . . . and now competitive prices. Low-end technical workstations are running rings around microcomputers 66
Vendor showdown looms 70

Features

IBM ON THE REBOUND

by John Rymer

Results from the second DECISIONS/Paine Webber Survey of MIS Attitudes show that MIS looks favorably on IBM's recent moves, particularly its Personal System/2 line of microcomputers 75

SOFTWARE MAINTENANCE: OPERATION 'CODE CLEANUP'

by Rick Cook

As keeping old applications in order consumes more and more of the information systems budget, companies are taking closer looks at tools for streamlining the effort 80

ISDN: SO FAR, YET SO NEAR

by John Bush

After an endless series of fits and starts, public digital phone networks are finally about to take off. But be sure to fasten your seatbelt—the ride will definitely be bumpy 85

Computer & Communications DECISIONS (USPS 771-1040 ISSN 0010-4558) is published monthly, except for two issues in January, February, and March, for $65 per year by Hayden Publishing Co., Inc., a subsidiary of VNU, 10 Mulholland Drive, Hasbrouck Heights, NJ 07604. Second-class postage paid at Hackensack, NJ 07602, and additional mailing offices. POSTMASTER: Send address change to *Computer & Communications* DECISIONS, P.O. Box 1031, Southeastern, PA 19398. For subscription information, please call (215) 630-9323.

DECISIONS

Computer & Communications

Cover Photo:
Ed Joseph

page 85

page 32

Editor's Message
Up against the micro 13

DECISIONS Intelligence 15

Product Spotlight
Living with (and without) Netview 21

Perspectives
IBM World/*The battle continues* 25
Information Interface/*Missing the ISDN boat* 27
Database Decisions/*Beware the benchmark* 29
Information Strategies/*A question of value* 31

Technology Trends
Software/*Spreadsheet-to-mainframe links* 37
Systems & Peripherals/*Needed: Friendly processors* 45
Microsystems/*CD-ROM databases thrive* 51
Networks & Communications/*Ethernet: A wider berth* 57

Buyers' Guide
Network management 93

Solutions File
Multinational accounting 32
Zen accounting: Federal Express installs a centralized distributed system.

New Products 102

Advertiser and Editorial Indexes 108

Computer & Communications Decisions' purpose to help MIS managers and professionals make cost-effective choices for new systems development and manage the coporation's key information assest.

Decisions gives MIS decision-makers:

- Critical detail on new products and services
- Analyses of key trends in information systems technology
- Insight into the strategies of their peers in applying and managing information systems technology.
- Advice on managing relations with end users and superiors.
- How to make information-handling resources and staff more effective, productive and responsive.
- How the latest in information-handling technology can improve operations.
- How MIS managers can promote effective end-user computing.

Computer & Communications Decisions' accuracy policy:

- To make diligent efforts to ensure the accuracy of all editorial material and to publish prompt corrections. Corrections appear in the "Your Turn" department.
- To refuse any advertisement deemed to be fraudulent.

Copyright© 1987 Hayden Publishing Co., Inc., a subsidiary of VNU, Robert J. Lydon President. Printed at Judd's, Inc. All rights reserved. *Computer & Communications Decisions* is issued free of charge to qualified MIS managers, supervisors, and senior staff responsible for the implementation, expansion, and maintenance of computer and communications systems. To request a subscription, please complete the Subscriber Qualification Form included in each issue.

The publisher reserves the right to reject requests from unqualified individuals. Subscription rates: Qualified subscribers in the U.S. and Canada—free. Paid subscription rates in the U.S., $65. Single copies—$4.00. All other countries via surface mail—$75. Single copies—$9.00 Air-delivery rates: Europe—$90; Japan, Asia, Africa, the Middle East, and Australia—$110; New Zealand/New Caledonia—$125. Limited number of subscriptions for persons outside the field.

Changing your address? Complete the Subscriber Qualification Form in the magazine, being sure to attach old mailing label in the space provided.

Back issues of *Computer & Communications Decisions* are available on microfilm, microfiche and 16mm or 35mm roll film from Xerox University Microfilms, 300 N. Zeeb Rd., Ann Arbor, MI48106, (313) 761-4700.

Where neccessary, permission is granted by the copyright owner for libraries and others registered with the Copyright Clearance Center (CCC) to photocopy any article herein for the base fee of $1.50 per copy of the article plus 50¢ per page per copy. Payments accompanied by the identifying serial fee code below should be sent directly to the CCC, 21 Congress ST., Sanlem, MA 01970. Copying done for other than personal or internal-reference use without the express permission of Hayden Publishing Co., Inc./*Computer & Communications Decisions* is prohibited. Requests for special permission or bulk order should be addressed to the editor. Serial Fee code: 10-4558-84, $1.50, plus 50¢.

Want to contact *Computer & Communications Decisions?* Address correspondence to Editor, *Computer & Communications Decisions*, 10 Mulholland Dr., Hasbrouck Heights, NJ 07604.

EDITOR'S MESSAGE

Ted Hardin

Up against the micro

When a marketing executive for one of the more successful suppliers of IBM PC clones heard of our plan to invite our MIS audience to "design" the optimal microcomputer (page 61 in this issue), his reaction didn't surprise me.

"Why bother," came the word from Texas, "when you can buy PCs configured any way you want?"

Well and good. I would, however, suggest that the gentleman, whose livelihood and golf game depend on a machine with less than 10 years of generic history under its belt, go to a library, pull out a mechanical encyclopedia, and look up "bicycle."

Bicycles, compared to computers, are pretty simple devices. But nobody today rides one that looks anything like the first four or five versions that were generic to their respective times. In spite of this, some people who assemble and sell them seem to think that microcomputers have already arrived at some sort of ultimate state.

I don't mean to underplay the practical miracle of desktop computing—I subscribe to it, with the general reservation that more credit for the miraculous is owed to the software side of the house than it will ever receive. And, on a personal level, I find myself bumping up against machine limitations far more often than I plumb the depths of a solid software application.

Another thing: I wish everyone reading this would immediately mail me the cash, per minimum wage hourly rate, for time they have spent taking the cover off of a PC or clone, removing an add-in board and resecuring both it and the case—for purposes of changing *one* dip switch setting. I most surely would never have to buy another state lottery ticket. What I'm alluding to, of course, is that microcosm of an MIS department all of us have to singlehandedly staff and manage if we want to pull real productivity out of a micro.

My current real-life example, if you must know, deals with mating a new Bernoulli Box II with a PC's Limited 286 running at 12 MHz. This stuff is good hardware, as far as I can tell; the drives give you unlimited storage—at 40 Mbytes per set—with expedient, Winchester-like access, and the computer itself is swift and reliable. But having followed documentation for both components to the letter, one phones Utah (Iomega) to find that the 286 will have to run in third gear (6 MHz) to boot from and access the Bernoulli unless one wants to try an "unsupported" driver (until the supported version is available, maybe by year end). I do, I do. Ah, but installation of the new driver means also to get back into the box, pull the interface card and change ... one dip switch.

So far, I have done nothing more than stare at it for two weeks.

I will eventually prevail. So will we all. We have accepted the fact that we have to finish building these systems after we buy them and have even bought the semantics that turn it into an advantage called expandability. In the meantime, the editors of DECISIONS are looking forward with considerable anticipation to your interpretations of what kind of functionality package a microcomputer could really become.

Robin Nelson

THE DECISIONS/PAINE WEBBER SURVEY

IBM ON THE REBOUND

Results from the second DECISIONS/Paine Webber Survey of MIS Attitudes show that MIS looks favorably on IBM's recent moves, particularly its PS/2.

by John Rymer

The most telling result of the second DECISIONS/Paine Webber Survey of MIS Attitudes is a dramatic improvement in respondents' general opinion of IBM. IBM scored the largest gain—23 percent—in the second survey's Vendor Popularity Index, which tracks short-term opinion shifts on selected suppliers.

IBM's uptick seems primarily attributable to its Personal System/2–Operating System/2 microsystem, its 937X midrange processors, and, to a much lesser extent, the potential of Systems Application Architecture. PS/2–OS/2 and SAA were announced after the first survey was complete, this past spring, but before the second survey was taken, in June.

"The results say IBM is getting its message across, but must deliver the goods," says Stephen K. Smith, vice president at Paine Webber Inc., cosponsor with DECISIONS of the survey.

There were other winners in the second MIS attitudes survey. US Sprint demonstrated an appeal that showed it is a serious challenger to MCI Corp. as AT&T's chief long-distance rival. AT&T and Northern Telecom Inc. also registered gains in popularity as communications equipment suppliers. Software vendors Management Science America Inc., Computer Associates International Inc., and On-Line Software International Inc. improved their standings with respondents. The results also suggest that user opinions of Digital Equipment Corp. and their plans to buy DEC products are holding steadily high despite IBM's gains.

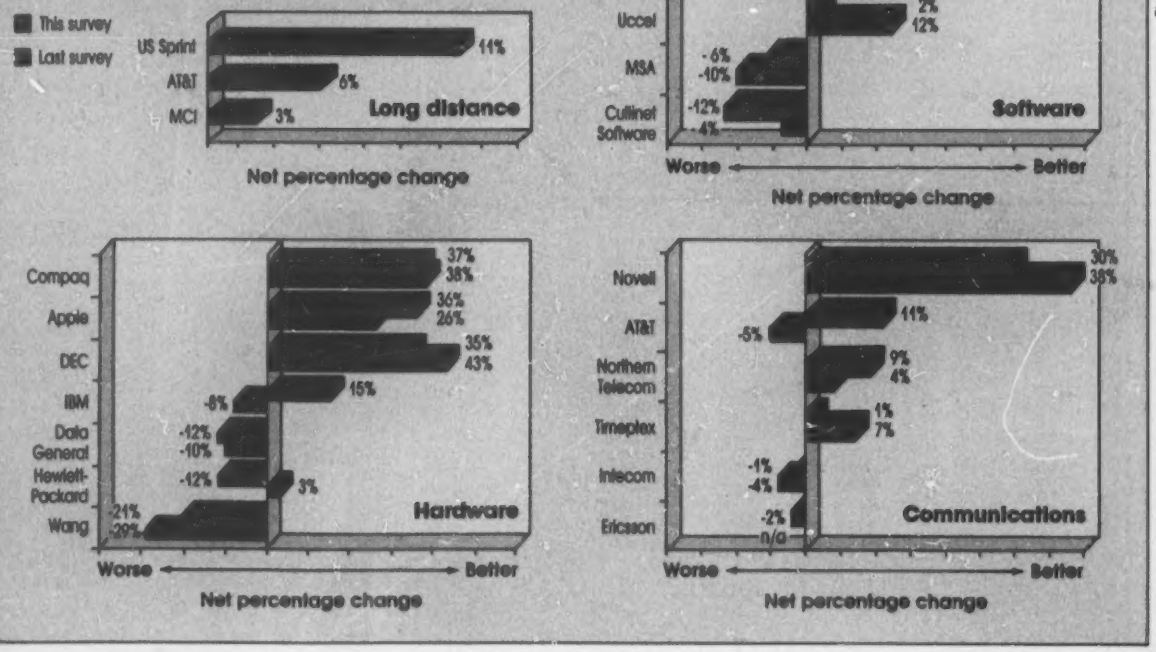
On a roll

The second survey's results say the PS/2 is a big hit with MIS (see Figure 4). Of the 838 respondents—a sample heavily weighted toward IBM

Figure 1

VENDOR POPULARITY INDEX

Based on responses to: "During the last quarter, how has your opinion of the following vendors changed as a potential supplier?" Net percentage of changed opinions is depicted; highs and lows are represented.



Charts by Vincent J. Gallo/Janet Kranke

shops—28 percent said they would acquire PS/2s during the third quarter of the year, and 47 percent said they would buy before year's end. As expected, intentions to buy PS/2s are significantly higher among respondents with IBM mainframes.

These numbers are high for a new machine, particularly considering that the key to unlocking the power of the PS/2's architecture—the OS/2 operating system—won't be available in its initial version until the end of the year. The ability of IBM and Microsoft Corp., OS/2's developer, to deliver the operating system appears to be an article of faith among MIS managers. Responses to a question about attitudes toward OS/2 indicate that the majority of respondents still have questions—but fewer than might be expected. Only 51 percent of the respondents said it was too early to judge OS/2 (52 percent of respondents with large IBM mainframes). However, 26 percent of respondents (34 percent of those with large IBM mainframes) are factoring OS/2 into their plans—again, high numbers for a product that can't yet be fully evaluated. "This result shows that corporations will be adopting OS/2," says Robert Therrien, software analyst for Paine Webber. "Many people have been waiting for this kind of system for years. OS/2 lets you put a minicomputer on your desktop."

Still other results suggest PS/2 has become a planning—read that, "long-term"—consideration for respondents, particularly IBM shops. When asked which of a list of products, standards, and architectures were important to respondents' planning, the PS/2 came out on top by far. Forty-five percent overall said the PS/2 was a planning consideration; token-ring local-area networks were the next most important factor, at 32 percent. Among current IBM 3090 and 308X users, however, 54 percent are including PS/2, and presumably OS/2 as well, in their plans.

Paine Webber's Smith believes only IBM could pull off this kind of reception to a new micro architecture and operating system. "Anybody else who announces something as far off and intangible as OS/2 and SAA simply wouldn't get the attention," he says.

The PS/2–OS/2 [illegible]ch undoubtedly was boosted by Microsoft's reputation. In the second survey, Microsoft continued to score highest (most positive) among all software vendors.

MS-DOS: The future is now

Yet the positive reception of PS/2 and OS/2 by corporations may not mean that a move toward the new standard will come at the expense of the older MS-DOS machines. When asked which micros respondents would be most likely to buy, the PS/2 scored high, but so did the IBM Personal Computer and micros from Compaq Computer Corp., as well as the "Other" classification, which likely means mostly PC-clone marketers. The question did not address volume, but the results imply that many if not most corporations will get into IBM's new game by buying only a few PS/2s this year.

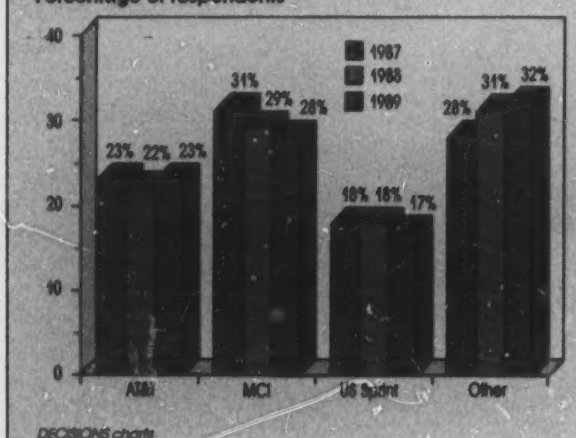
The strength of the "Other" category, coupled with that of the PC and Compaq, bodes well for existing MS-DOS applications, at least in the short term. The user bases—and profits—of clone makers may well hold up until they are able to respond to the Micro Channel bus and integrated functionality of the PS/2.

SAA: Shrouded in doubt

Many respondents are skeptical about IBM's ability to fully deliver SAA, a blueprint for distributing applications and functions across IBM's incompatible hardware platforms. SAA is massive and ambitious, and, respondents tend to think, still nebulous. "There are just too many remaining variables in SAA today," says Therrien.

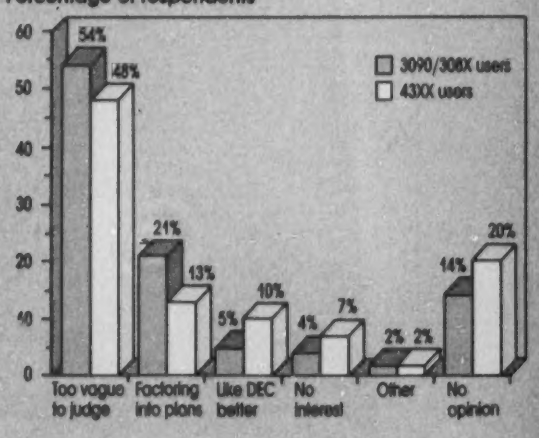
The second survey probed long- and short-term indicators for SAA (see Figure 3). First, 83 percent of the respondents either don't like SAA, have no interest in or opinion about it, or are reserving judgment. Almost as

Figure 2
VYING FOR SECOND FIDDLE
Based on responses to question: "Who is/will be your secondary long-distance carrier?"



DECISIONS charts

Figure 3
SAA: WAIT AND SEE
Based on responses to: "Which best characterizes your attitude toward IBM's SAA?"



many respondents (12 percent) prefer DEC's architecture as are factoring SAA into their plans (14 percent). Respondents with large IBM mainframes are a bit more willing to go along, with 21 percent saying they're planning for SAA now.

The bad news for IBM is that 10 percent of the respondents with 43XXs said they like DEC's single processor/single operating system architecture better, only 3 percent less than said they were planning for SAA. The 43XX sites are crucial to IBM in its battles with DEC for the midrange market.

Overall, SAA was the third most important factor on the previously mentioned list of long-term planning priorities. Among respondents with large IBM mainframes, however, SAA was the second most important concern on the list of planning considerations, displacing token-ring LANs.

DEC's strength undiminished

DEC, the vendor whose success at the expense of IBM helped spur the announcement of SAA and other recent moves supporting distributed applications and processing, appears to have been largely unaffected by them. Responses indicate DEC's VAX midrange computers and DECnet communications architecture remain sources of considerable strength.

Still, DEC took a hit on the survey's broad measure of respondents' opinions of vendors. DEC's standing in the Vendor Popularity Index fell by 8 percent from the first survey. This result *could* be interpreted to mean that IBM's gain in popularity has come at the expense of DEC, but respondents' buying intentions for midrange computers don't support this conclusion. Thirty-nine percent of the respondents said they use VAXs as their primary midrange processors, and 19 percent plan to buy VAX 8XXX and -11/7XX processors. The closest competitor was IBM's 937X; 12 percent of respondents said they plan to buy it. DEC fared even better among respondents with large IBM mainframes: 49 percent have VAXs, and 20 percent plan to buy new ones. Large mainframe sites are also the basis for the 937X's indicated strength. Twenty percent of respondents with 3090s or 308Xs plan to buy 937Xs.

These results, says Smith, show that the 937X isn't having much effect on DEC's engine of growth. "The 9370 is being well received within the IBM base and is having some impact on Wang," he says. Smith notes that when midrange purchasing plans are broken out by vendor, the results indicate respondents are moving toward the VAX and 937X, and away from systems offered by vendors like Wang, Data General, and Hewlett-Packard.

Survey results indicate that more MIS dollars may be flowing to DEC and AT&T in the near term. When asked how much their spending with specific vendors will change this year compared with last year, respondents tabbed those two vendors most often for increases. For IBM, the percentage of respondents reporting plans to increase spending with IBM was flat compared with the previous survey.

The good news for IBM was in respondents' plans to buy IBM mainframes, and that capacity utilization remains high (see Figure 5). Twenty-six percent of the respondents indicated they had plans to buy 3090s, up 10 percent from the figure in the first survey. Among respondents with 3090 or 308X mainframes, 36 percent reported plans to buy 3090s, also up 10 percent from the first survey. Smith suspects that price cuts and price/performance improvements are the reason this larger demand wasn't translated into bigger spending increases for IBM.

Parting shots at Uccel

The second survey's results suggest that Computer Associates' chances of digesting archrival Uccel without loss of customer loyalty are probably good. Some respondents are unhappy that Uccel's management decided to sell out to its competitor. Uccel's standing in the Vendor Popularity In-

(Continued on page 100)

Figure 4
THE RISE OF PS/2
Based on responses to the question: "From which vendors do you/will you buy micros?"

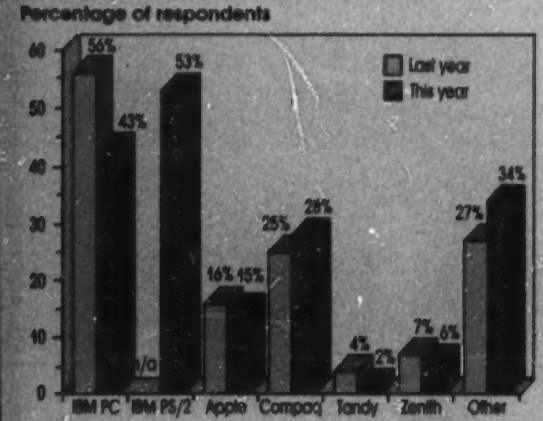
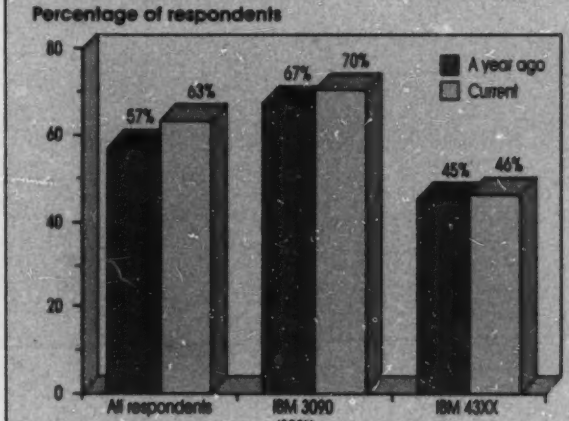


Figure 5
CAPACITY INDEX
Percentage of respondents reporting combined mainframe and mini capacity use of 75 percent or greater.



dex, an obvious gauge of respondents' reaction to the merger, fell by 10 percent, indicating a fair amount of displeasure.

This is understandable, given the fierce competition between Uccel and Computer Associates and the loyalties it engendered among users. The question is whether or not Uccel users will bolt from the newly merged company. The results suggest they won't, no matter how mad they are at Uccel. Computer Associates' popularity rating actually rose by 5 percent.

Of the other mainframe software vendors on the survey, all except Cullinet Software Inc. scored gains in popularity among respondents. As a group, these vendors ranked low in the results of the first survey, but respondents' opinions of them appear to be improving.

CASE: Searching for customers

One of the most surprising results of the survey is the low significance assigned to computer-aided software engineering (CASE) tools by respondents. In response to the question, "With 100 points to allocate, how would you assign the importance of [certain] software-development products in your organization?", integrated CASE tools received an average score of only seven. The highest scores were received by fourth-generation query languages, like Focus from Information Builders Inc. (25 points average) and 4GL development products, like ADS-Online from Cullinet (18 points average).

These scores don't indicate buying plans or installed bases for these products. Rather, they suggest which types of software development products respondents value most. Individual tools associated with CASE fared better, but still scored lower than more familiar 4GLs. Software design tools received an average score of 17, code generators, 12, and life cycle management tools, 8.

US Sprint vs. MCI

The most heated battle in long-distance telecommunications isn't between AT&T and any of its many competitors, according to respondents, but between MCI and US Sprint for the top share of the business AT&T doesn't get (see Figure 2). Results of the second survey indicate that US Sprint is worth betting on.

US Sprint appears to have momentum among respondents, while MCI does not. Responses to the question, "Who is/will be your secondary long-distance carrier [for 1987-89]?" indicate that MCI's share of AT&T's leavings will shrink, while US Sprint's will be virtually flat. That's a benefit by default, but a trend in US Sprint's favor nonetheless. US Sprint fared much better than MCI in the Vendor Popularity and Reputation Indexes.

The picture that emerges of respondents' plans for telecommunications traffic not handled by AT&T is not that rosy for either MCI or US Sprint. Indeed, it suggests the segment of the market available to MCI, US Sprint, and all other carriers will shrink relative to AT&T's growing share. The only growth indicated in the question about secondary carriers was for "Other," from 28 percent this year to 31 and 32 percent in 1988 and 1989, respectively, an implication that private corporate networks will assume a greater importance. D

Network Research makes your PC and VAX net work....

With the help of FUSION® Network Software and 3Com® LAN adapters.

You can build a network with most any combination of processors, operating systems, and protocols using FUSION Network Software. It was made to fit in your multi-system environment. For example, you can connect a VMS VAX to an MS-DOS PC—And add a VMS MicroVAX and/or a Xenix Compaq 386. You can link many other systems, too, with your choice of the XNS or TCP/IP protocols (or both simultaneously!).

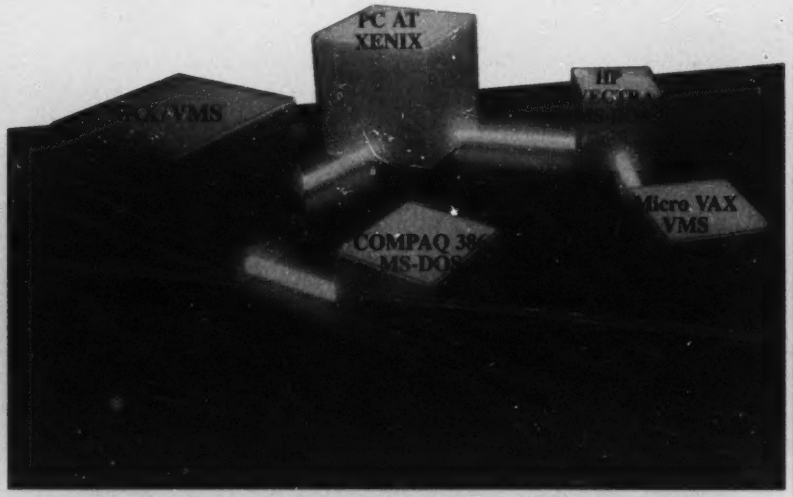
And because we're a 3Com dealer, you can choose from 3Com's intelligent or non-intelligent ethernet adapters—proven network links designed to optimize productivity and improve information sharing. These adapters and many other third party vendor LAN controllers are compatible with FUSION Network Software.

So call Network Research for information on how you can get your net working today.

Toll Free **(800) 541-9508**
In Calif. **(805) 485-2700**

network research corporation
2380 North Rose Avenue
Oxnard, California 93030
TELEX: 297579 NRCO UR

3Com®
Authorized Dealer



CIRCLE 61